

in connection with Anderson's College by its then president, Dr. James Young, referred to above—Allan Glen's Institution, and the Atkinson Institution were amalgamated to form the Glasgow and West of Scotland Technical College. The main object of the governors of the reconstituted institution has been from the first "to afford a suitable education to those who wished to qualify themselves for following an industrial profession or trade"; it is not the purpose of the College to supersede the ordinary apprenticeship, but rather to supplement it, and the courses for day students in engineering are arranged to permit of their spending the summer months in serving part of their apprenticeship, while devoting the winter months to college work.

The maintenance of the institution entails an annual expenditure of about 25,000*l.*, derived in approximately equal proportions from endowments, students' fees, Government grants, and grants from the Corporation of Glasgow and other public bodies.

The College work has hitherto been conducted in the buildings formerly occupied by the amalgamated institutions and in hired premises scattered over the centre of the city, but these have long been inadequate, and for some years it has been necessary to refuse admission to hundreds of students for lack of room. So serious is the want of accommodation that a gift of 5000*l.* by Mrs. John Elder to make provision for lectures of a popular character on descriptive astronomy cannot be utilised under existing conditions, and contemplated extensions in other directions are meanwhile impossible for similar reasons. In December, 1900, a meeting of the citizens was convened by the Lord Provost of Glasgow to consider the scheme which the Governors, after full deliberation on the various alternatives, had adopted for the erection of new buildings. A committee was formed to obtain subscriptions, and in less than two years a sum of nearly 180,000*l.* was raised.

The Governors appointed Mr. David Barclay, F.R.I.B.A., to be their architect, and they are satisfied that he has designed buildings admirably adapted to the purpose in view. They will consist of five large wings, two being parallel to George Street; the other three will be placed at right angles to them, and parallel to Montrose Street. The walls facing the streets will be of red Dumfriesshire stone; all the other exterior walls will be of white enamelled brick, thus securing a surface which will give the greatest amount of light to the rooms facing the three interior courts.

The following table indicates the main departments of the College, and, approximately, the space (in square feet) allotted to each:—mathematics, 5500; natural philosophy, 10,400; chemistry, 16,500; technical chemistry, 7500; mechanics, 10,000; machine design, 10,000; prime movers, 15,100; metallurgy, 4800; electrical engineering, 15,900; practical engineering, 4000; mining and geology, 3400; architecture and building construction, 7700; biology, 3200; industrial arts, 4000; workshops, 7900; bakery school, 3100; administration, library, general class-rooms, &c., 37,000.

The prime movers laboratory, the dynamo laboratory, and the practical engineering laboratory will be placed at the bottom of the interior courts, and will be lighted entirely from glass roofs. The chemical departments will occupy practically the whole of the top floor, and will contain several large laboratories and other similar rooms set apart for special purposes. The plan of confining each department to one floor has been followed throughout, with a view to promote efficiency in working.

The buildings will be the largest of the kind in Great Britain, and will cover nearly two acres; their cost, with the site, but exclusive of the equipment, will amount to about 210,000*l.* Meantime, contracts have been made for the erection of the first section of the buildings, comprising nearly three-fourths of the whole.

The inadequacy of the present buildings for the work of a technical institution has been long felt by teachers and students, but there are many scattered all over the world who have a grateful remembrance of the instruction and guidance they obtained in these old-fashioned rooms; there is every reason to hope that with improved facilities for work there will be quickened zeal to take advantage of them.

G. A. G.

## NOTES.

WE are glad to know that steps have been taken to secure and erect a memorial of the late Sir George Stokes in Westminster Abbey. At a meeting of a joint committee of the University of Cambridge and the Royal Society, held on March 12, the Duke of Devonshire being in the chair, it was resolved that the authority of the Dean and Chapter of Westminster be requested to place a medallion relief portrait of Sir George Stokes in the Abbey of the same general character as the memorials of Darwin and other scientific men already there. A letter has since been received from the Dean of Westminster expressing his general assent to the proposal and his willingness to take detailed plans into consideration. Mr. Hamo Thornycroft, R.A., has undertaken to prepare a medallion, the material to be bronze, and the head to be in high relief. It is estimated that the cost of placing this memorial in Westminster Abbey will be about 400*l.*, and as there are doubtless many admirers of Stokes who would like to contribute to the fund being raised for the purpose of the memorial to him, a subscription list has been opened. The treasurers of the fund are the Vice-Chancellor of the University of Cambridge and the treasurer of the Royal Society. Subscriptions should be made payable to Messrs. Barclay and Co., Ltd., and should be sent either to them at their Cambridge branch or to the treasurer of the Royal Society.

THE two gold Hofmann medals, established in 1888 in connection with the seventieth birthday of August Wilhelm von Hofmann, for award to distinguished foreign men of science, have been conferred by the German Chemical Society upon Prof. Henri Moissan and Sir William Ramsay.

THE centenary of the announcement of the atomic theory by Dalton was celebrated at Manchester on Tuesday and Wednesday. We propose to publish an account of the celebration in our next number with an article upon the atomic theory.

THE Royal Society of Edinburgh will hold a *conversazione* in the rooms of the Royal Institution, Edinburgh, on Saturday, June 6.

AN International Exhibition will be opened at Athens on June 3, and will last six months. The British exhibits, as at present arranged, will occupy 500 square metres, and will consist mainly of engines, ship-models, and guns.

THE Central News Agency reports that, according to a despatch from the city of Mexico, the Colima volcano is again in active eruption.

DURING the week beginning June 1, Prof. J. J. Thomson, F.R.S., Cavendish professor of experimental physics in the University of Cambridge, will, says *Science*, give a course of lectures in the physical laboratory of the Johns Hopkins University on "A Theory of the Arc and Spark Discharges."

MR. W. L. SCLATER left England last week to resume his duties as director of the South African Museum at Cape Town. Before his departure he was presented with an address signed by nearly six hundred members of the Zoological Society, testifying to the tact and ability shown by him while occupying the post of secretary, to which he was provisionally elected.

A MARBLE bust of George Stephenson was unveiled at the railway station at Rome on April 23. The bust was presented by the Institution of Civil Engineers to the municipality of Rome as a supplement to the tablet placed in the vestibule of the railway station at Rome in 1881 to commemorate the centenary of the birth of the father of the railway system.

A GENERAL meeting of the British Academy was held on May 14, Lord Reay, the president, being in the chair. Papers were read by Dr. Edward Caird, Master of Balliol College, Oxford, on "Idealism and the Theory of Knowledge," and by Prof. W. M. Ramsay on "The Importance of a Systematic Exploration of Asia Minor (in conjunction with the recently formed societies for the same purpose in Austria and in Germany)."

WE regret to record the death, on May 12, of Mr. William Talbot Aveline, at the age of eighty-one. He was engaged on the staff of the Geological Survey under De la Beche, as long ago as 1840. His early field-work was carried on in the region of the Mendip Hills and in South Wales; subsequently in many parts of North Wales, the western and midland counties of England, he personally surveyed large areas, while in later years he was called on to superintend the field-work in the Lake District. The maps and sections of the Geological Survey, especially in Silurian regions, form the chief records of his labours, for he wrote but little. He became a fellow of the Geological Society in 1848, and in 1894 he was awarded the Murchison medal in appreciation of his long-continued and careful labours in field-geology.

WE learn from the *Athenaeum* that a Norwegian expedition, commanded by Captain Roald Amundsen, left Christiania a few days ago with the object of fixing the exact situation of the magnetic North Pole. The party are expected to be absent for four years, the route taken being by Lancaster Sound, Boothia Felix, where a magnetic observatory will be established for a period of two years under control of two members of the scientific staff, and back by the North-West Passage, Victoria Land, and the Behring Straits.

ON Tuesday next, May 26, Prof. E. J. Garwood delivers the first of two lectures at the Royal Institution on "The Work of Ice as a Geological Agent"; on Thursday, May 28, Prof. J. A. Fleming commences a course of two lectures on "Electric Resonance and Wireless Telegraphy"; and on Saturday, May 30, Prof. S. P. Thompson begins a course of two lectures on "The 'De Magnete' and its Author." The Friday evening discourse on May 29 will be delivered by His Highness the Prince of Monaco on "The Progress of Oceanography," and on June 5 by Prof. H. H. Turner on "The New Star in Gemini." The extra discourse on June 19 will be delivered in French by Prof. Pierre Curie on "Radium."

A PARIS correspondent states that on May 8, a balloon built for MM. Lebaudy made a notable performance. The balloon left the Moisson Aërodrome in the morning and returned to it after having navigated round Mantes at a distance of 10 kilometres. The performance was executed in 1h. 36m. by a circuitous way the length of which has been estimated as 37 kilometres. The length of the air-ship is 56 metres, and the volume 2300 cubic metres. The engine is a 40 horse-power. There were two persons on board, M. Juchmès, a well-known professional aéronaut, and a mechanic. The peculiarity of the balloon is that it has two screws working in the central part, and not a single propeller at some distance behind. There are two rudders behind at a distance of about 20 metres from the car, one for the vertical motion and the other for movement in a horizontal direction.

DURING the course of his speech at the opening of the Johnston Laboratories of the University College of Liverpool, of which a short account was given in these columns last week, the President of the Local Government Board

made it clear that he at least understands fully the important part science has taken in the work of civilisation and progress. Mr. Long said that so long as he had the honour to occupy the position he now held he would do his best to secure on behalf of the Government of the day the utmost assistance that could be given to the advancement of science in all parts of the country. It seemed to him that the connection was very close between the development of science, and especially of that form of science which was known as preventive medicine, and the commerce for which this great country was so justly famous. There is no doubt of this intimate interdependence of scientific knowledge and commercial success, and Mr. Long did well to commend the people of Liverpool for having raised by donations to university education the sum of 200,000*l.*

At the anniversary meeting of the Royal Geographical Society on Monday, the medals and awards which are given annually for the encouragement of geographical science and discovery, and have already been announced (March 19, p. 469), were presented. In the course of an address the president said that Captain Sverdrup, in completing our knowledge of the Parry archipelago, had also completed our general knowledge of Arctic geography. The whole problem of Arctic geography had now been solved. There were many isolated pieces of work that would have to be undertaken, but none which would justify the dispatch of an expedition on a large scale. With regard to the Antarctic regions, he said that the German expedition had the great advantage of having selected one of the two best routes for Antarctic discovery. After giving a short summary of the position of the British expedition, the president said that the *Morning* must go south again next December, and for this purpose funds, amounting to perhaps 15,000*l.*, must be provided.

THE fall of dust between February 21 and 23 last was observed over such an exceptionally extensive area of Europe, from Ireland eastward into Austria, that the phenomenon has attracted more than usual attention, and already a number of papers dealing with local falls have been written. On the May pilot chart, just published by the Meteorological Office, there is, however, an extremely interesting map of the area from the Equator to 55° N., and from 40° W. to 20° E., exhibiting at a glance the distribution of dust or sand, of mist, haze or fog, the mean barometric pressure for the five days February 18 to 22, and the wind direction recorded by observers out at sea. The accompanying letterpress shows that prior to the dust reaching Europe, sandstorms had interfered with the progress of the British Boundary Commission in Nigeria, south of the Sahara, and had also been experienced on the northern edge of the Sahara. At sea, off Africa, ships were hampered in their movements by the obscuration due to the great quantities of sand in the air, from the Gulf of Guinea to 30° W. and up to the Azores. The map shows very clearly that the wind about the Canaries, becoming easterly to south-easterly in direction on February 19, drove the dust-cloud to west and north-west, and near the Azores, the wind being south-westerly, the cloud was quickly carried north-eastward to England and Europe. It is deserving of notice that, according to the log of the R.M.S. *Briton*, keeping near the African coast, the sand was very dense, "huge quantities of red dust," with the wind at north-east, but a temporary change to south-south-west for ten minutes cleared the air immediately. On the wind going back into north-east, the sandstorm came over again. The steamer *Kirkby*, on the other hand, running westward from Madeira, had the dust fall with a south-east wind; when the wind changed to north the dust ceased.

A CORRESPONDENT of the *Times*, writing from St. Vincent on April 22, gives some interesting particulars of the Soufrière eruption of that date. Soon after daylight, he observed that inside of a quarter of an hour the enormous umbrella-like steam-cloud spread out enormously. At this time no noise was noticeable in the town. A little later, violent explosions occurred at frequent intervals. It soon became quite dark, but, following previous cases, everything began to go in the direction of Barbados. Fine metallic dust fell until next day, black and gritty, apparently magnetite. Châteaubelair did not suffer this time except for another deposit of sand and small stones. Georgetown suffered much, and large stones fell throughout the Carib country.

MUCH discussion has recently taken place with reference to the behaviour of the Weston galvanic cell as a standard of electromotive force. The observed anomalies appear to be dependent upon the behaviour of the particular concentration (14.3 per cent.) of the cadmium amalgam previously recommended for the standard form of the instrument, and are not connected with any change in the condition of the cadmium sulphate which enters into the composition of the cell. It seems to be now definitely established that with less concentrated cadmium amalgams the Weston element gives quite normal and trustworthy indications.

In the *Sitzungsberichte der Berliner Akademie* Profs. Holborn and Austin describe some important experiments on the loss of weight of the platinum metals when heated to temperatures of 1000° to 1500° C. by means of an electric current. In the case of platinum, rhodium and iridium this loss of weight only takes place in an atmosphere containing oxygen, and is probably due to a chemical change. With palladium the phenomenon is independent of the nature of the surrounding gas, but depends very considerably on the pressure, the rate of loss of weight increasing as the pressure of the gas decreases. The behaviour of palladium agrees with the supposition that the loss of weight is simply due to sublimation.

WE have received from Dr. Jansen a short summary of the work already accomplished in the preparation of the "Technolexicon," to which we have referred on one or two occasions recently. Up to the present assistance has been received from 341 societies and more than 2000 industrial establishments and individuals. Of the societies, 272 are German, 42 English and American, and 27 French. An analysis of existing dictionaries, catalogues, &c., has given a list of something like one and a quarter million words, and it is expected that a large number more will be obtained from the note-books of collaborators, which will be called in during 1904. It is not expected that the dictionary will be ready for printing until the end of 1906.

PROF. LADISLAUS NATANSON has published in the *Journal of Physical Chemistry* for February a lecture delivered before the Cracow Academy of Sciences on "Inertia and Coercion." The author considers that the phenomena of nature can be divided into two classes, those which bear a character of permanence, and those which tend to subside. Under the first category he places the motions considered in the ideal systems of rational dynamics, and the equilibria of classical thermodynamics. There are, however, other cases in which the two classes of phenomena cannot be considered separately; these are studied in the subject of thermokinetics. Equilibrium is only a limit to phenomena, and to study what actually occurs in nature we must go on to study the laws which preside over their progress. In cases where a disturbance tends to subside, as in the diffusion

of gases, the conduction of heat, and the flow of electricity, we find that the progress of the phenomenon is represented quantitatively by the flux of a certain quantity per unit time across unit surface. This flux depends in general on what may be called the stimulus of the phenomenon. This "stimulus" may give impetus to the flux, but it will in every case be largely employed in overcoming "coercion," a property which always tends to impede the flow, but does not in general (e.g. in the case of diffusion of gases) destroy it altogether.

In the *Contemporary Review* for May, Mr. Frederick Soddy, whose name is well-known as a co-worker with Prof. E. Rutherford at the McGill University, Montreal, describes what may be referred to as the Canadian view of radio-activity. Briefly stated, this is to the effect that the radio-active thorium X, which is contained in ordinary thorium, and can be separated by precipitating the inactive thorium by means of ammonia, is a first decomposition-product of the unstable thorium atoms, that the radio-active emanations which are transmitted by thorium X to neutral gases, such as hydrogen and nitrogen, and which are condensed by cooling to -130° C., represent a further stage in the atomic degradation, and finally it is suggested that helium—an invariable constituent of radio-active minerals—is possibly the last and stable product of the shattered thorium atoms. According to this view, which will not be received without an effort by chemists trained to believe in the conservation of matter and the immutability of the elements, the energy of radium is derived from the deflagration of a minute and unweighable proportion of the almost explosive radium atoms.

In the *Nineteenth Century*, Mr. William Ackroyd, writing on "Radium and its Position in Nature," directs attention to the fact that radium not only has the highest atomic weight, but probably, in accordance with a well-known law, is also the rarest of the known elements. The close resemblance between Becquerel rays and X-rays is referred to, and it is suggested that the production of the former is analogous to the phosphorescence of calcium sulphide after exposure to sunlight. The possibility that an atomic bombardment may be the source of energy of radio-active bodies is, however, inferred from a reversed phenomenon observed by Prof. Graham Bell and Mr. Sumner Tainter, in which solids, liquids and gases are made to emit a musical sound under the influence of an intermittent beam of light pulsating 500 or 600 times in a second.

In a paper dealing with the infection-powers of ascospores in the Erysiphaceæ (*Journal of Botany*, May), Mr. E. S. Salmon takes up a subject which has been almost untouched. It is known that conidial forms of apparently the same species are restricted in their power of germinating to definite and distinct host-plants, and thus there are differentiated a number of so-called biologic forms. Whether ascospores show a similar selective capacity for infecting host-plants is the problem which Mr. E. S. Salmon endeavours to elucidate.

AN article of considerable interest which appears in the *Transactions* of the Royal Scottish Arboricultural Society refers to the inception of the scheme for laying out tree plantations on the gathering grounds of waterworks. On the lands belonging to the Halifax Corporation, which took the lead in this matter, ash, sycamore and alder have been planted along with Scots pine and larch, but the intention is to leave the hardwood only as a permanent crop. Other papers which are of primary importance to foresters relate to the larch and its diseases, thinnings in planted spruce, and the injurious effect of smoke on trees.



THE study of ecological botany has not been so vigorously pursued during recent years in Great Britain as in other countries, but the few papers that have appeared have been the outcome of thoroughly sound work. A botanical survey of the West Riding of Yorkshire has been completed, and the results obtained by Dr. W. G. Smith and Mr. C. E. Moss for the south-western district are incorporated in an article published in the *Geographical Journal*. Both the descriptions and photographic illustrations are exceedingly good, but the main feature is the representation of the various formations on a map on the scale of two miles to the inch, which should be carefully studied by all ecological workers; also the origin and relationships of the types of vegetation are critically discussed.

No. 5 of the *Proceedings* of the Chester Society of Natural History contains a list of the species of Lepidoptera recorded from Chester and four adjacent counties, drawn up by Mr. G. O. Day, with the assistance of two other gentlemen.

WE have received vol. iv. of "El Peru," a work on the geology and mineralogy of that country published by the Geographical Society of Lima. It appears that by the decease of Dr. Antonio Raimondi in 1890, the publication of this work, which commenced in 1874, was interrupted. The present volume is based on that observer's manuscripts, which it has taken a long time to prepare for publication. The bulk of the volume is devoted to the rocks of the country, both igneous and sedimentary; but the latter part includes a series of miscellaneous observations, including the description of a lower jaw of *Mastodon andium* from a Peruvian locality. The work should be invaluable to Peruvian geologists and petrologists.

A VERY important and interesting contribution to the study of the venation of the wings of dragon-flies appears in No. 1331 of the *Proceedings* of the U.S. Nat. Museum, illustrated by no less than twenty-four plates and many text-figures. The author, Mr. J. G. Needham, treats the subject from a phylogenetic point of view, and claims to have discovered features in wing-development which will be applicable to insects generally, as well as others affecting the classification of dragon-flies. He finds, for example, that the same type of wing, in accordance with the needs of the mode of life, has been independently developed in totally different sections of the group. This, of course, largely affects the determination of fossil dragon-flies, which have been to a great extent named on the evidence of the wings, or portions of the same, and it is shown that in several instances these determinations are wholly incorrect. *Libellulium kaupi*, for instance, is probably not a dragon-fly at all, while *L. agrias* belongs to the *Æschnidæ*, the details of the specimen figured by Westwood being entirely different to those characteristic of the *Libellulidæ*.

VISITORS to the Natural History Museum will not fail to notice a great improvement in the appearance and instructiveness of the exhibits in the reptile and fish galleries, which were left at the death of Sir W. H. Flower in their original condition. Until the director undertook the rearrangement, the cases were crammed with a number of faded and "khaki"-coloured specimens, unaccompanied by any descriptive labels. The duplicate and superfluous specimens have now, for the most part, been weeded out, and those that are left placed so that they can be well seen by visitors. In many instances old specimens have either been replaced by new ones or have been painted up so as to give them, so far as possible, some sort of resemblance

to the living animals; and this process of replacement and renovation is being actively continued. A large specimen of a thunny which has been for many years in the museum affords an excellent example of what can be done by judicious painting. The splendid colouring of the Malay python is displayed in a specimen presented by Mr. Rothschild, as well as by a second example, on which an artist was still engaged at the time when this was written. In the reptile gallery, which is in the more forward condition, descriptive labels have already been placed in several of the cases, in which the specimens have been removed from the old hideous sycamore stands and set on sanded ground-work.

THE fourth part of vol. lxxiii. of the *Zeitschrift für wissenschaftliche Zoologie* is entirely occupied by the first part of an exhaustive memo'r on the structure of the cell, the author, Prof. E. Rohde, in this section devoting his attention to the nucleus and nucleolus. No less than nine beautifully coloured plates (some of which are double) illustrate this section of the subject. To the first part of the succeeding volume (lxxiv.) Herr E. H. Zietzschmann contributes an account of the morphology and histology of the scent-glands which occur on the face and limbs of different members of the deer family. Very full details are given of the nature of these structures in the greater number of the generic groups, and the existence of a small metatarsal gland in the elk is confirmed. It is perhaps a matter for regret that the author did not see his way to express any opinion as to the existence of an homology between the limb-glands of the deer and those of other ungulates. The scent-gland of the centipede *Iulus communis* forms the subject of an article by Dr. G. Rosse in the same fasciculus, which also contains papers on the spermatogenesis of Cœlenterata, and on the development of Dolomedes.

THAT our village ancestors were not devoid of artistic sense is apparent from many old articles of furniture that are bought up and treasured by the more wealthy classes. In a paper on the decorative arts of our forefathers as exemplified in a Southdown village in the *Reliquary* for April, Mr. W. Heneage Legge has given some interesting examples of beautiful objects still to be found in a single village, but the trend of modern ideas is to induce a dead monotony of machine-made shop goods. In the same journal Mr. F. W. Galpin gives an illustrated account of the Portland reeve staffs. These are notched quadrangular rods, by means of which the annually appointed reeve, or steward, keeps his account of the rents due to the King as Lord of the Manor.

MARRIAGE customs are generally interesting on account of the often rude symbolism that accompanies them; students of this branch of ethnology will find many marriage customs of various southern Indian tribes related by E. Thurston in *Bulletin* vol. iv., No. 3, of the Madras Government Museum. Ethnologists are fully aware of the value of the *Bulletins* of this museum, and the current number contains a mass of valuable material contributed by the energetic director of the museum. A short account of fire-walking in Ganjám does not record any new feature. Our schoolmasters are not likely to adopt any of the forty-two kinds of punishment inflicted on naughty boys in native schools.

WE have received the April number of the *Journal of Hygiene* (vol. iii. No. 2). Several papers deal with preventive medicine, e.g. the significance of the presence of the colon bacillus in ground waters, by Mr. Horton; the

distribution of the diphtheria bacillus in the throats of "contacts," by Dr. Graham Smith; and upon the correlation of several diseases of animals in South Africa, by Dr. Edington. Messrs. Graham Smith and Sanger discuss the biological or precipitin test for blood in its medico-legal aspects, and Messrs. Nuttall and Shipley complete their monograph upon the structure and biology of the *Anopheles* mosquito. The last is an important contribution, and is illustrated with some beautiful figures.

A SECOND, revised and enlarged, edition of Mr. H. M. Leaf's "The Internal Wiring of Buildings" has been published by Messrs. Archibald Constable and Co., Ltd. The new edition contains an additional chapter on electricity meters.

MR. EDWARD ARNOLD has published a revised edition of "A Course of Practical Chemistry," by Mr. W. A. Shenstone, F.R.S. This little book is intended as a laboratory companion for use with the author's "Inorganic Chemistry."

THE fourth volume of the "Petite Encyclopédie Scientifique du XX<sup>e</sup> Siècle," viz., "La Chimie dans l'Industrie, dans la Vie et dans la Nature," by M. A. Perret, published by MM. Schleicher Frères and Co., of Paris, has reached a second edition.

WE have received a copy of "A Guide to the Early Christian and Byzantine Antiquities in the Department of British and Mediæval Antiquities," printed by order of the Trustees of the British Museum. The book runs to 116 pages, and is illustrated with fifteen plates and eighty-four wood-cuts. Visits to the Christian Room of the British Museum with this guide as a companion will, if the book has been previously studied, be full of interest. The guide, even without the visits, will prove of great value to teachers of history.

A SECOND edition of the "Life History Album," edited some years ago by Mr. Francis Galton, F.R.S., has been published by Messrs. Macmillan and Co., Ltd. The "Album" was, in its original form, the joint production of a small committee of medical men, but Mr. Galton has largely rearranged and rewritten the contents, so that the present volume may be regarded almost as a new publication. Convenient provision is made in numerous well-arranged tables for a record of the genealogy, description at birth, the life and medical history for each year from birth to a hundred years of age, and for records as to wife (or husband) and children. An appendix supplies tests of vision and nine charts on which to represent graphically the weight and stature for each year of life.

A SUPPLEMENTARY volume to the "Scientific Memoirs of Thomas Henry Huxley," edited by Sir Michael Foster and Prof. E. Ray Lankester, has been published by Messrs. Macmillan and Co., Ltd. In the preface to the new volume Prof. Lankester says, "when it was discovered that owing to a bibliographical obscurity we had omitted the later portions of Huxley's 'Survey Memoir' on fossil fishes from our collection, it became necessary to issue a supplement containing the important work which we had inadvertently passed over. The opportunity is taken to add three interesting essays by Huxley, which, . . . have considerable interest for zoologists." These essays are "Vestiges of the Natural History of Creation. Tenth Edition. London, 1853." "The Rede Lecture, 1883," and the "Inaugural Address. Fisheries Exhibition. London, 1883." The essays referred to are not contained in the published edition of Huxley's more general essays.

In a recent number of the *Berichte* Carl Neuberg describes a method of resolving racemic aldehydes and ketones by means of an optically active hydrazine. The difference in solubility between the stereoisomeric hydrazones is very considerable, and on combining racemic arabinose with *l*-menthylhydrazine, it was found that the hydrazone of the lævorotatory *d*-arabinose readily crystallised out in colourless prisms, which were practically pure, whilst the hydrazone of the *l*-sugar remained in solution as syrup, which could not be crystallised.

THE wandering of a methyl group in the conversion of pinacone into pinacoline is a phenomenon that has long been familiar to chemists, and further illustrations have recently been given by Crossley in the case of the dimethyldihydroresorcin. Three further examples occurring in the antipyrin group of compounds are described by Knorr in the *Berichte*, and it is noteworthy that in every case the transference of the methyl radicle takes place from a  $>C(CH_3)_2$  group. It would therefore appear that the reluctance of one carbon atom to carry two methyl groups is an important factor in bringing about this somewhat unusual type of change.

THE additions to the Zoological Society's Gardens during the past week include a Great Wallaroo (*Macropus robustus*) from South Australia, presented by Mr. T. Becket Birt; a Black-crested Eagle (*Lophæetus occipitalis*) from West Africa, presented by Mr. A. Boyd; a Black-eared Marmoset (*Hapale penicillata*) from South-east Brazil, a Schneider's Skink (*Eumeces schneideri*), five Common Skinks (*Scincus officinalis*), four Common Chameleons (*Chamocleon vulgaris*) from North Africa, six Hispid Lizards (*Agama hispida*) from South Africa, a Naked-necked Iguana (*Iguana delictissima*) from Tropical America, two Seven-banded Snakes (*Tropidonotus septemvittatus*), a Mocassin Snake (*Tropidonotus fasciatus*), two Testaceous Snakes (*Zamenis flagelliformis*), a Hog-nosed Snake (*Heterodon platyrhinos*) from North America, four Gallot's Lizards (*Lacerta galloti*), four Atlantic Lizards (*Lacerta atlantica*) from the Canary Islands, deposited; a Cape Zorilla (*Ictonyx zorrilla*) from South Africa, purchased.

## OUR ASTRONOMICAL COLUMN.

NOVA GEMINORUM.—*Bulletin* No. 19 of the Yerkes Observatory is devoted to the observations of Nova Geminorum which have been made since the telegram announcing its discovery was received on March 27.

Prof. Hale records the colour of the Nova as "a strong red," and when in the best focus of the 40-inch telescope there is a decided crimson glow around the image for about 2" or 3", which is not present with the images of the comparison stars. Prof. Barnard found that with the 40-inch refractor the focus of the Nova did not differ appreciably from that of the surrounding stars.

Magnitude observations show a decrease from 8.51 on March 27.715 to 8.96 on April 4.583, with a secondary maximum of 8.76 intervening on March 30.673 (H.C.O. scale of magnitudes).

Two of the prisms of the Bruce spectroscope were removed and a special camera constructed on March 28, and the spectrum of the Nova photographed the same night with an exposure of 3h. 12m. In the spectrogram obtained Prof. Frost has found a band extending from about  $\lambda$  4598 to  $\lambda$  4696 (mean about  $\lambda$  4647), and a very strong H $\beta$  line having its mean value at  $\lambda$  4862, with two narrow bright maxima near the less refrangible end at about  $\lambda$  4877 and 4882. A less refrangible band extends from  $\lambda$  5647 to  $\lambda$  5685 (mean at  $\lambda$  5666), and another from  $\lambda$  5729 to  $\lambda$  5775 (mean about  $\lambda$  5752); a sharp boundary on the violet side of the latter suggests the presence of a dark band.